

The Lower Palaeolithic Colonisation of Europe. Antiquity, Magnitude, Permanency and Cognition

Victoria Ling

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Undoubtedly, the early hominin presence in Europe represents a topic debated among archaeologists all over the world. Different scenarios have been promoted, as the available data has been interpreted in many ways. However, most of the approaches focus on lithic tool analysis, paleoenvironment, and site taphonomy. That is why a book that addresses this topic from a new perspective, i.e., non-lithic hominin behavior, is very appealing.

In the Introduction, the author defines four main questions related to this new perspective of study, which her research will systematically address in order to identify patterns of European colonization—the chronology, time intervals during which hominins survived, their migrations, and cognitive abilities—over the time interval roughly between 1.8 and 0.3 Mya.

Chapters 2 to 5 present, in a comprehensive manner, background information related to these four problems—Long vs. Short Chronology and the issues with primary context sites, climate evolution and environmental conditions throughout the Pleistocene, possible colonization routes, and cognitive implications of manufacturing Mode 1 and Mode 2 industries.

Further on (Chapters 6–7), Ling decides to address these four questions by creating two analytical tools—a database comprising European sites older than ca. 300 kya and a grading system meant to assess the behavioral complexity as reflected by non-lithic archaeology.

The database comprises 352 sites, but only 108 were selected for the analysis, based on the reliability of three criteria—dating, context, and provenance. They are grouped into nine regions, following Gamble's biogeographical divisions of Europe (Gamble 1986).

The 13 non-lithic behaviors selected by the author can be grouped as follows—raw material related (the use of wood, bone, the variety of stones used in tool manufacture, and the use of rare local stone); transportation related (transfer distance for lithic raw material and manuports); site organization (shelter arrangements, artificial pavements, and spatial organization of activities); and, other activities (the use of fire, symbolic behavior, evidence for hafting, and faunal remains as reflecting food consumption).

The database has 14 tables—11 that cover the 13 analyzed activities (one table includes all three activities related to lithic raw material), a general table with information

on all of the 352 sites, plus tables on site dating and hominin remains.

Chapter 7, the most extensive of the book, quantifies the behavioral complexity as reflected by non-lithic archaeology, following the 13 activities mentioned above. The idea behind this type of quantification is that every type of activity can be carried out with variable levels of complexity, directly reflecting the time allotted and number of actions performed. Thus, five qualitative Grades were created in order to assess every type of behavior, ranging from 1 (opportunistic behavior, minimal manipulation of the environment/objects) to 5 (high level of manipulation of the environment/objects, deliberate actions with foreseen results, high-level energy investment). For a more sensitive quantification system, every grade was divided into four subgrades (a to d), which were assigned a Cognitive Score (CS) in 0.5 increments (for example, Grade 1a has CS 0, Grade 2a has CS 2, Grade 3a has CS 4, etc.).

Although intimidating at first glance, the grading system developed by Ling makes sense and a few examples should make her approach more straightforward. The bones deliberately broken and exhibiting use-wear from Vértesöllös were associated to a rather opportunistic behavior (Grade 1d – CS 1.5); the bone tools from Castel di Guido accounted for the understanding of particular properties of bone and had a shape that was independent from their natural form (Grade 4d – CS 7.5); the use of antler/bone hammers, reported at Boxgrove or Purfleet, give evidence for highly complex behavior reflected in tool knapping, privileging technique over force (Grade 5d – CS 9.5).

However, there are some shortcomings in Ling's approach that should be mentioned. Some deal with the literature-based character of the approach—the information was published at different times over the past 50 to 60 years, with variable levels of accuracy, and according to different methodological approaches. Inaccurate information may exist in estimation of transfer distance for lithic raw material, since not all sources were identified using modern methods such as thin sections analysis or X-Ray diffraction. Several topics, such as symbolic behavior, are subject to alternative interpretations. It is the case for the Stránska Skála elephantid vertebra, which was recorded as incised bone with secure context and association with cultural remains, and hence was assigned to Grade 4, with a CS of 7. However, some scholars argue that such grooves

have no anthropic origin, but are merely vascular channels (d'Errico and Villa 1997), in which case, the CS would become 0.

Other shortcomings deal, in my view, with the interpretation. Within the 'Spatial organization' section, the CS increases according to the complexity of organization of activities, which requires "intentionality and plan-ahead, and it indicates some level of stability in behavior" (p. 83). Thus, it is unclear to me why single activity sites (such as butchery or biface manufacture sites) are only granted CSs of 1 or 1.5, since they obviously account for both intentionality and plan-ahead, but at a broader scale. The cognitive abilities should not solely be assessed at intra-site level if additional data is suitable.

A somewhat contradictory category is the 'Use of rare local stone in tool manufacture,' which only accommodates the site of Sima de los Huesos, where a single quartzite biface was reported. It refers to sites where most of the lithic assemblage was made on commonly occurring local rock, but also contains a few artifacts made on 'rare local' material. What I do not understand is how 'rare' and 'local' combine. If the stones are really 'rare' (a notion that is not defined), then maybe they are not local, in which case, they should be associated with transfer-related behaviors. If geological studies prove they are local, they should be associated with 'Variety of stone used in tool manufacture,' because if several types of raw material are used at a site, it is reasonable to assume that they are available in variable proportions.

Chapters 8–11 represent four levels of data analysis, each of them having an ever deeper resolution—the sites are presented according to geographical and chronological distribution, as well as technological mode; then, the behaviors are analyzed first according to their number and then to their complexity for every MIS/age bracket and geographical division. Finally, a Mann-Whitney U-test is used to assess if the 13 behaviors support the idea of a cognitive superiority of Mode 2 over Mode 1 producers, the results indicating no significant differences.

The final chapter provides a synthetic overview of the Lower Paleolithic colonization of Europe. Five phases of hominin dispersals into Europe between 1.8 Mya and 300 kya were identified. The first phase consisted of short-lived occupations in circum-Mediterranean areas, but as the glacial cycles began to switch from 41 kyr to 100 kyr, the hominin occupations moved further into Europe. Longer interglacials represented longer periods of habitable conditions in Europe, permitting the *in situ* evolution of the populations, culminating with the 'Lower Paleolithic Revolution' of Phase 4 (MIS 13 – MIS 10), which corresponds to a large number of sites with more diverse and complex behaviors.

The scenario advanced by Ling seems to support the updated version of the Short Chronology (Roebroeks 2006), in which Lower Pleistocene hominin presence was scarce and intermittent, but from ca. 500–600 kya becomes more 'permanent.'

Whether readers agree or not with the scenarios advocated by Ling, it is undeniable that her approach puts together information on behaviors which, unless very spectacular, were only mentioned as an appendix to lithic tool analysis. Her study is useful for becoming familiar with general problems related to the Lower Paleolithic, and the database represents a very good tool for getting quick information on Lower Paleolithic sites. Some inherent shortcomings, mostly resulting from the literature-based character of the research, do not affect the general quality of the book.

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